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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,433

12/08/2003

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07/12/2007

EXAMINER

DOUGLAS, JOHN CHRISTOPHER

ART UNIT

PAPER NUMBER

1764

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/730,433	Applicant(s) PLANTENGA ET AL.	
	Examiner John C. Douglas	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/01/2007 has been entered.

### ***Response to Amendment***

Examiner acknowledges the submission filed on 5/01/2007 containing remarks and amendments to the claims. Examiner acknowledges claims 1 and 7 are amended.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer (US 6086749) in view of Schindler (US 4414141).
2. With respect to claims 1 and 3, Kramer discloses a process for the hydroconversion of a hydrocarbon feed in the presence of a catalyst mixture of two catalysts that each contain Groups VIB and VIII metals on a porous inorganic support where at least 75% of the total pore volume are in pores of between about 20 to about 30 nm and less than 10% of the total pore volume is in pores within the range of 0 to 10 nm, the catalyst having a surface area ranging from at least about 200 to about 600 m<sup>2</sup>/g and a pore volume ranging from about 0.8 to about 3.0 cc/g and Kramer discloses that the difference between the densities in the first and second catalyst can

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be +/-10 wt% (see Kramer, claim 1, column 32, lines 25-29, and column 32, line 66-column 33, line 32).

Kramer does not disclose that the second catalyst has at least %5 of the pore volume in pores with a diameter of at least 100 nm.

However, Schindler discloses a catalyst that has 0.25 cc/g out of 1.20 cc/g in pores with a diameter greater than 150 nm (see Schindler, column 1, Table).

Schindler discloses that such a catalyst has improved hydrotreating activity and improved catalyst life (see Schindler, column 1, lines 33-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Kramer to include a catalyst that has 0.25 cc/g out of 1.20 cc/g in pores with a diameter greater than 150 nm in order to improve hydrotreating activity and catalyst life.

Also, it would have been obvious for the first catalyst to inhibit sediment formation and promote asphaltene removal and for the second catalyst to provide catalytic activity and inhibit sediment formation because such characteristics would flow naturally from the prior art catalyst disclosed (see MPEP 2145 II., citing *Ex parte Obiaya*).

3. With respect to claim 2, Kramer discloses that the catalyst base may be alumina (see Kramer, column 29, lines 17-18).

4. With respect to claim 4, Kramer discloses where the catalysts comprise about 5 to about 50 wt% of molybdenum oxide and about 1 to about 12 wt% of nickel or cobalt oxide (see Kramer, column 32, lines 16-24).

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5. With respect to claim 6, Kramer, discloses that the catalyst bed is an ebullated bed configuration (see Kramer, column 23, lines 6-13).

6. With respect to claims 7 and 9, Kramer discloses a catalyst mixture of two catalysts that each contain Groups VIB and VIII metals on a porous inorganic support where at least 75% of the total pore volume are in pores of between about 20 to about 30 nm and less than 10% of the total pore volume is in pores within the range of 0 to 10 nm, the catalyst having a surface area ranging from at least about 200 to about 600 m<sup>2</sup>/g and a pore volume ranging from about 0.8 to about 3.0 cc/g and Kramer discloses that the difference between the densities in the first and second catalyst can be +/-10 wt% (see Kramer, claim 1, column 32, lines 25-29, and column 32, line 66-column 33, line 32).

Kramer does not disclose that the second catalyst has at least %5 of the pore volume in pores with a diameter of at least 100 nm.

However, Schindler discloses a catalyst that has 0.25 cc/g out of 1.20 cc/g in pores with a diameter greater than 150 nm (see Schindler, column 1, Table).

Schindler discloses that such a catalyst has improved hydrotreating activity and improved catalyst life (see Schindler, column 1, lines 33-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the catalysts of Kramer to include a catalyst that has 0.25 cc/g out of 1.20 cc/g in pores with a diameter greater than 150 nm in order to improve hydrotreating activity and catalyst life.

Also, it would have been obvious for the first catalyst to inhibit sediment formation and promote asphaltene removal and for the second catalyst to provide catalytic activity and inhibit sediment formation because such characteristics would flow naturally from the prior art catalyst disclosed (see MPEP 2145 II., citing *Ex parte Obiaya*).

7. With respect to claim 8, Kramer discloses that the catalyst base may be alumina (see Kramer, column 29, lines 17-18).

8. With respect to claim 10, Kramer discloses where the catalysts comprise about 5 to about 50 wt% of molybdenum oxide and about 1 to about 12 wt% of nickel or cobalt oxide (see Kramer, column 32, lines 16-24).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer in view of Schindler as applied to claim 1 above, and further in view of Riley (US 4069139). Kramer discloses where the feed is a heavy hydrocarbon that has at least 50 % boiling above about 510 degrees C (see Kramer, column 25, lines 4-9), but Kramer does not disclose that the feed comprises at least 2 wt% sulfur and at least 5 wt% of Conradson Carbon.

However, Riley discloses a heavy hydrocarbon feed that contains 8 wt% of sulfur and a Conradson carbon content of from about 5 to about 50 wt% (see Riley, column 3, lines 20-38).

Riley discloses that heavy hydrocarbon feeds usually contain large amounts of sulfur and a Conradson carbon content of from about 5 to about 50 wt% (see Riley, column 3, lines 31-38).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Kramer in view of Schindler to include a heavy hydrocarbon feed that contains 8 wt% of sulfur and a Conradson carbon content of from about 5 to about 50 wt% because such amounts of sulfur and Conradson carbon are usually found in heavy hydrocarbons.

### ***Response to Arguments***

Applicant first argues that the holding in *In re Fulton* (cited in last office action) is not applicable to this application. Applicant's reasoning is that the prior art in *Fulton* was only relating to a specific problem, traction, and that is how the prior art as a whole found motivation. However, Kramer and Schindler are both concerned with a specific process, hydrotreating. Therefore, a catalyst having an improved hydrotreating activity (see Schindler) would be desirable in a hydrotreating process (see Kramer). Thus, the catalyst in Schindler would be desirable in the process of Kramer.

Applicant's next argument is that the motivation cited to combine Schindler with Kramer is not sufficient. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, a



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sufficient motivation is that Schindler discloses that such a catalyst has improved hydrotreating activity and improved catalyst life (see Schindler, column 1, lines 33-35).

The remainder of Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD

7/3/2007



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